

Claims:

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*HB*

1. A process of agglomerating particulate material, said process comprising commingling said particulate material with a moistening effective amount of water, a binding effective amount of polymer and a binding effective amount of weak acid to produce a mixture and forming said mixture into agglomerates.

2. The process of claim 1 wherein said particulate material is a metallic ore.

3. The process of claim 2 wherein said metallic ore is iron.

4. The process of claim 1 wherein said polymer is comprised of at least two polymers.

5. The process of claim 1 wherein said polymer is selected from the group consisting of guar, guar derivatives, starch, modified starch, starch derivatives, alginates, pectins, polyacrylamides, polyacrylates, polyethylene oxides and mixtures thereof.

6. The process of claim 1 wherein said weak acid is selected from the group consisting of citric acid, malic acid and tartaric acid.

7. The process of claim 1 wherein said polymer and said weak acid together are about 0.01 to about 1.0 wt. % of said mixture.

8. ~~The process of claim 1 wherein the particulate material is comprised of iron ore, the polymer is comprised of guar and the weak acid is comprised of citric acid.~~

9. Pellets comprised of particulate material, a binding effective amount of polymer and a binding effective amount of weak acid.

10. ~~The pellets of claim 9 wherein said particulate material is a metallic ore.~~

11. ~~The pellets of claim 10 wherein said metallic ore is iron.~~

12. The pellets of claim 9 wherein said polymer is comprised of at least two polymers.

13. ~~The pellets of claim 9 wherein said polymer is selected from the group consisting of guar, guar derivatives, starch, modified starch, starch derivatives, cellulose derivatives, alginates, pectin, polyacrylamide, polyethylene oxides, polyacrylates and mixtures thereof.~~

14. The pellets of claim 9 wherein said weak acid is selected from

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the group consisting of citric acid, malic acid and tartaric acid.

15. The pellets of claim 9 wherein said polymer and said weak acid together are about 0.01 to about 1.0 wt. % of said pellets.

16. The pellets of claim 9 wherein said particulate material is comprised of iron ore, said polymer is comprised of guar and said weak acid is comprised of citric acid.

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A process of agglomerating particulate material, said process comprising commingling said particulate material with (1) a moistening effective amount of water, (2) a binding effective amount of a polymer selected from the group consisting of guar, guar derivatives, starch, modified starch, starch derivatives, and mixtures thereof and (3) a binding effective amount of the salt of a weak acid to produce an agglomerating mixture and forming said mixture into agglomerates.

18. The process of claim 17 wherein said particulate material is metallic ore.

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19. The process of claim 18 wherein said metallic ore is iron ore.

20. The process of claim 17 wherein said salt of a weak acid selected from the group consisting of salts of citric acid,

salts of tartaric acid, salts of malic acid, salts of fumaric acid, salts of lactic acid and mixtures thereof.

21. The process of claim 17 wherein said polymer and said salt of a weak acid together are about 0.01 to about 1.0 wt. % of said agglomerating mixture.

22. Pellets comprised of particulate material, a binding effective amount of polymer selected from the group consisting of guar, guar derivatives, starch, modified starch, starch derivatives and mixtures thereof and a binding effective amount of the salt of a weak acid.

23. The pellets of claim 22 wherein said particulate material is metallic ore.

24. The pellets of claim 23 wherein said particulate material is iron ore.

25. The pellets of claim 22 wherein said salt of a weak acid is selected from the group consisting of salts of citric acid, salts of tartaric acid, salts of malic acid, salts of fumaric acid, salts of lactic acid and mixtures thereof.

26. The pellets of claim 22 wherein said polymer and said salt of a weak acid together are about 0.01 to about 1.0 wt. % of said

pellets.

27. A process of agglomerating particulate material, said process comprising commingling said particulate material with (1) a moistening effective amount of water, (2) a binding effective amount of a polymer selected from the group consisting of guar, guar derivatives, and mixtures thereof and (3) a binding effective amount of the salt of a weak acid to produce an agglomerating mixture and forming said mixture into agglomerates.

28. The process of claim 27 wherein said particulate material is metallic ore.

29. The process of claim 28 wherein said metallic ore is iron ore.

30. The process of claim 27 wherein said salt of a weak acid selected from the group consisting of salts of citric acid, salts of tartaric acid, salts of malic acid, salts of fumaric acid, salts of lactic acid and mixtures thereof.

31. The process of claim 27 wherein said polymer and said salt of a weak acid together are about 0.01 to about 1.0 wt. % of said agglomerating mixture.

32. Pellets comprised of particulate material, a binding effective

amount of polymer selected from the group consisting of guar, guar derivatives, and mixtures thereof and a binding effective amount of the salt of a weak acid.

33. The pellets of claim 32 wherein said particulate material is metallic ore.
34. The pellets of claim 33 wherein said particulate material is iron ore.
35. The pellets of claim 32 wherein said salt of a weak acid is selected from the group consisting of salts of citric acid, salts of tartaric acid, salts of malic acid, salts of fumaric acid, salts of lactic acid and mixtures thereof.
36. The pellets of claim 32 wherein said polymer and said salt of a weak acid together are about 0.01 to about 1.0 wt. % of said pellets.

Add Acid